

US009636030B2

# (12) United States Patent Kato et al.

## (54) PORTABLE ELECTRONIC APPARATUS

(71) Applicant: Seiko Instruments Inc., Chiba-shi,

Chiba (JP)

(72) Inventors: Teruo Kato, Chiba (JP); Hideki

Okuda, Chiba (JP); Dai Terasawa,

Chiba (JP)

(73) Assignee: SEIKO INSTRUMENTS INC., Chiba

(JP)

(\*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 553 days.

(21) Appl. No.: 14/204,168

(22) Filed: Mar. 11, 2014

(65) Prior Publication Data

US 2014/0275931 A1 Sep. 18, 2014

(30) Foreign Application Priority Data

Mar. 12, 2013 (JP) ...... 2013-049551

(51) Int. Cl.

A61B 5/0408 (2006.01) A61B 5/00 (2006.01) A61B 5/024 (2006.01) A61B 5/0404 (2006.01)

(52) U.S. Cl.

CPC ...... A61B 5/04085 (2013.01); A61B 5/02438 (2013.01); A61B 5/0404 (2013.01); A61B 5/0831 (2013.01)

### (10) Patent No.: US 9,636,030 B2

(45) **Date of Patent:** 

May 2, 2017

#### (58) Field of Classification Search

#### (56) References Cited

#### U.S. PATENT DOCUMENTS

7,428,433 B2 9/2008 Juan 2013/0096412 A1\* 4/2013 Kaneko ........... A61B 5/02438 600/390

\* cited by examiner

Primary Examiner — Lee S Cohen (74) Attorney, Agent, or Firm — Brinks Gilson & Lione

#### (57) ABSTRACT

There is provided a portable electronic apparatus including an apparatus main body that includes electronic components built therein, a fixation belt that is used to attach the apparatus main body to a living body surface, a connector that is provided at an end of the fixation belt in a belt longitudinal direction, and has an engagement protrusion that is detachably stored in an engagement recess formed at the apparatus main body, and a biasing body that is provided in the engagement recess, and biases the engagement protrusion stored in the engagement recess so as to maintain an engagement state between the engagement recess and the engagement protrusion.

#### 10 Claims, 14 Drawing Sheets

